



Celestial Nav Exercises and Questions

Principles of Celestial Navigation

1. Leaving Terceira (EP $38^{\circ}45' N$ $027^{\circ}12' W$) for St Malo on May 25, at 07.32AM WEST, what is the time in UTC?
2. Are we during our trip on the same hemisphere as the sun or on opposite hemispheres?
3. The GHA of the Sun is 300° at 07H56M59S UT. What GHA do you expect 2 hours later?
4. What is the LHA at 07H56M59S UT? And 2 hours later?
5. At around what time will the LHA equal 0° ? What does this mean in geometrical terms (like Greater/smaller circle, Meridian, ...)? And what is the GHA then?
6. On our EP, the Calculated Altitude of the Sun is $38^{\circ}16'$ at 0957H UT, according to the Nautical Almanac app. What is the Zenith Distance? Is the GP nearby?
7. The Declination of the Sun at 0957H UT is $21^{\circ} 4.4' N$. Draw a triangle, like in this example, of the GP, the AP (EP) and the P.
8. We took a sextant reading at 0957H UT and noted an Observed Altitude of $38^{\circ}27'$. What is the Intercept? Are we closer or more away from the Sun, compared with the calculated Almanac value?

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9. In the intercept method, we use an Assumed Position to help us finding our position. At what Lat and Long would the AP be as the best match for our EP?
10. When plotting we will be drawing straight position lines, although the method prescribes to work with position circles. Why may we do that?
11. If we can only use the Sun as celestial object, what will be our navigational approach if sight conditions are unfavourable?